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| 10/822,878 | 04/13/2004 | Alex Cooper | | 3177 |

7590
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11/07/2005

EXAMINER

HOFFMANN, JOHN M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1731

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/822,878 | Applicant(s) COOPER ET AL. | |
| | Examiner John Hoffmann | Art Unit 1731 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the limitation that the mixture "lacks any particles convertible into abrasive particles...."

From **MPEP 2163.04**:

III. RANGE LIMITATIONS

With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure. In the decision in *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), the ranges described in the original specification included a range of "25%- 60%" and specific examples of "36%" and "50%." A corresponding new claim limitation to "at least 35%" did not meet the description requirement because the phrase "at least" had no upper limit and caused the claim to read literally on embodiments outside the "25% to 60%" range, however a limitation to "between 35% and 60%" did meet the description requirement.

See also *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1328, 56 USPQ2d 1481, 1487 (Fed. Cir. 2000) ("[T]he specification does not clearly disclose to the skilled artisan that the inventors... considered the... ratio to be part of their invention.... There is therefore no force to Purdue's argument that the written description requirement was satisfied because the disclosure revealed a broad invention from which the [later-filed] claims carved out a patentable portion"). Compare *Union Oil of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 997, 54 USPQ2d 1227, 1232-33 (Fed. Cir. 2000) (Description in terms of ranges of chemical properties which work in combination with ranges of other chemical properties to produce an automotive gasoline that reduces emissions was found to provide an adequate written description even though the exact chemical components of each combination were not disclosed and the specification did

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not disclose any distinct embodiments corresponding to any claim at issue. "[T]he Patent Act and this court's case law require only sufficient description to show one of skill in the . . . art that the inventor possessed the claimed invention at the time of filing.").

This new limitation (i.e. the lack of convertible particles) appears to be done to carve out a patentable claim. This is not permitted because the disclosure does not suggest that this carved-out portion is inherently supported.

Claims 5-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

When examining the present application, Examiner came across US patent to Brown 5621097, which indicates (at col. 4, lines 27-36) that temperatures "around 400-600C" are "below that at which sintering occurs". However, page 7, lines 9-11 of the present specification indicates that Applicant was able to sinter at temperatures well below those temperatures that Brown indicates as being possible.

And from personal experience, ceramic objects in Examiner's oven in his kitchen are completely unchanged at 450 F = 232 C. This also raises the question, as to whether one of ordinary skill is enabled to transform (i.e. sinter) ceramics at the same temperature – or as low as 150 C (= 302 F) – as indicated – or even as low as applicant's upper value of 300C (= 573 F)

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The MPEP sets forth what must be considered to establish whether the enablement requirement is met.

2164.01(a) Undue Experimentation Factors

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Factor (A) : claims are interpreted in light of the specification. The only specific heat treatment mentioned is the heating to 150-300. It is clear that the claims encompass a range that does not appear enabled.

Factor (B) , the nature of the invention is not overly complex.

Factors (C) and (D), firing of ceramics has been known for hundreds of years. If one could fire/sinter ceramics at the low range asserted by the present specification, it is presumed that it would be well known and more cost effective than the traditional energy-intensive firing at red-hot temperatures. On the contrary, as indicated above, Brown et al (US Pat. 5621097) indicates one cannot sinter aluminum hydroxide or oxide even at temperatures 300-450C greater than those asserted in the present specification.

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Factor (E) – the level of predictability is rather high. The decomposition of aluminum hydroxide is basic chemistry and the mechanics/kinetics of sintering are well-researched and understood.

Factors (F) and (G): there is little/no guidance as to how to perform the heat treatment disclosed in the specification. There is no working example.

Factor (H): It appears that the amount of experimentation would be enormous: It appears that no one has been able to sinter ceramics at such a low temperature, and the specification does not give any guidance as to what special techniques are necessary to get the reported sintering.

Weighing all the above factors, it is deemed that the present invention is not enabled.

Still further for claim 6: the term “dibutylphthalate” could not be found in the prior art. It is deemed that one would not be able to practice and use the invention because one would not know what the ingredient is.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 5: Line 1: calls for making “an abrasive tools” – it is unclear if it should be merely “abrasive tools” or “an abrasive tool”.

Line 2, the phrase “consisting exclusively only of” is indefinite as to its meaning. Under the standards set forth in MPEP 2111.03, one must turn to the specification to determine what is meant by the phrase. As far as examiner can tell, the specification fails to give guidance as to what is meant.

Line 7, it is unclear what is meant by “aluminum $\text{Al}(\text{OH})_3$ ”. It is unclear if/how it is different from plain “ $\text{Al}(\text{OH})_3$ ”.

Claim 6, the terms “curing agent sulfur” and “softener dibutylphthalate”, are indefinite as to what it requires. For example the first could be interpreted as “curing agent or sulfur” or “curing agent comprising sulfur” or something else. Likewise for the second term. The claim also has a list, but there is no conjunction, such as “and” or “or” – thus one cannot tell if all of the items are required, or just one.

Claim 5: the term “dibutylphthalate” is indefinite as to its meaning – examiner could find no mention of this term in the prior art. This is deemed to be a prima facie showing that one would not understand what is meant by the claim. The burden is now on applicant to demonstrate that the term would be understood.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Heany 2278442.

See how Heany was applied before. Col. 1, lines 8-12 reasonably suggest using only alumina abrasives and not using any other convertible particles.

Still further, it is deemed that the language "consisting exclusively only of" is the same as "consisting essentially of" (see MPEP 2111.03) and thus Examiner treats such as being the same as "comprising" and thus is open to having other ingredients that do not materially effect the invention.

Col. 2, lines 18-27 indicate that the addition of other oxides is preferred – thus it is clear that such is not necessary.

From MPEP 2145:

A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness; however, "the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) (Claims were directed to an epoxy resin based printed circuit material. A prior art reference disclosed a polyester-imide resin based printed circuit material, and taught that although epoxy resin based materials have acceptable stability and some degree of flexibility, they are inferior to polyester-imide resin based materials. The court held the claims would have been obvious over the prior art because the reference taught epoxy resin based material was useful for applicant's purpose, applicant did not distinguish the claimed epoxy from the prior art epoxy, and applicant asserted no discovery beyond what was known to the art.)

Thus, since it is only preferred to add the other oxides, it is deemed that Heany teaches that one does not require the use of the additives – only that such is inferior.

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And as to the last three lines of claim 5: it is noted that the claim requires only alumina particles – but there is no indication that the particles cannot have other ingredients. In other word: the phrase “abrasive particles of Al₂O₃” reads on abrasive particles that comprise Al₂O₃. And thus the particles can have other ingredients. A 90% alumina –10 % silica particle is still an alumina particle, because it comprises alumina. One would expect that all of Heany’s particles comprise alumina.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Heany.

In the event that Heany does meet the anticipation, it would have been obvious to use 100% aluminum hydroxide/oxide. Depending upon the what contaminations are acceptable/unacceptable. And, as indicated above, Heany only teaches the use of additives as preferred – it would have been obvious to not use them if they are not needed.

From MPEP 2144.04

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II. ELIMINATION OF A STEP OR AN ELEMENT AND ITS FUNCTION

A. Omission of an Element and Its Function Is Obvious If the Function of the Element Is Not Desired

Ex parte Wu , 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989) (Claims at issue were directed to a method for inhibiting corrosion on metal surfaces using a composition consisting of epoxy resin, petroleum sulfonate, and hydrocarbon diluent. The claims were rejected over a primary reference which disclosed an anticorrosion composition of epoxy resin, hydrocarbon diluent, and polybasic acid salts wherein said salts were taught to be beneficial when employed in a freshwater environment, in view of secondary references which clearly suggested the addition of petroleum sulfonate to corrosion inhibiting compositions. The Board affirmed the rejection, holding that it would have been obvious to omit the polybasic acid salts of the primary reference where the function attributed to such salt is not desired or required, such as in compositions for providing corrosion resistance in environments which do not encounter fresh water.). See also In re Larson, 340 F.2d 965, 144 USPQ 347 (CCPA 1965) (Omission of additional framework and axle which served to increase the cargo carrying capacity of prior art mobile fluid carrying unit would have been obvious if this feature was not desired.); and In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (deleting a prior art switch member and thereby eliminating its function was an obvious expedient).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heany as applied to claims 5-7 above, and further in view of Hakotani 5370759.

Heany does not disclose the use of rollers as claimed. However it is conventional to calendar ceramics to make ceramic green sheets; Hakotani is evidence of such (col. 5, lines 37, and 46-50). It would have been obvious to calendar (i.e. form through two rollers) the Heany ceramic to make the sheets, depending upon what sort of sheet-forming equipment one has handy. It is generally not invention to use a well known apparatus/structure for it's known use.

Response to Arguments

Applicant's arguments filed 25 October 2005 have been fully considered but they are not persuasive.

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It is argued that the invention does not deal with sintering ceramics. This is not persuasive because page 7, lines 9-12 discloses that tool is made by sintering. Since claims are interpreted in light of the specification, one of ordinary skill would view the claims as being directed to a sintering process.

IT is also added that the other ingredients PVC, hardener, etc. are not suitable for producing ceramics. No evidence/rationale is supplied to support this assertion. Moreover such seems unreasonable: as per Hakotani, col. 5, lines 32-45, similar ingredients are "conventionally used".

The affidavit from Mr A. Cooper has been considered. However, such does not appear to be directed to the rejection at hand. The affidavit is completely silent as to the temperatures of the sintering. Since the rejection points to evidence which shows the material would NOT sinter as disclosed, the affidavit fails to overcome the rejection.

As to the arguments that the changes to the claims define over Heany: See the discussion in the above rejection which point out why the claims do not define over Heany.

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Conclusion

Based on the specification disclosure of sintering the material and the apparent admission that the invention has NO sintering steps, it appears that there is no way to correct the present application. The only remedy would be to file a Continuation-in-Part in which the invention is more clearly explained (so to demonstrate that there is no sintering).

Claim 6 is not rejected over prior art because the prior art does not recognize the use of the dibutylphthalate – or even the existence of such a material.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

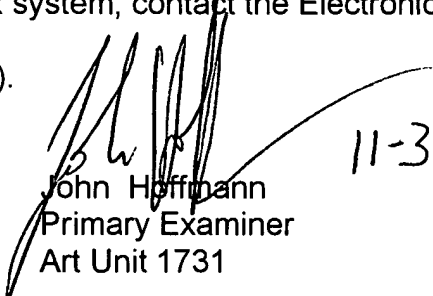
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Hoffmann
Primary Examiner
Art Unit 1731

11-3-05

jmh